

Thursday, March 22, 2012
POSTER SESSION II: DAWN OVER VESTA: SURFACE AND CRATERING
6:00 p.m. Town Center Exhibit Area

Ivanov B. A. Melosh H. J.

[*The Rheasilvia Crater on Vesta: Numerical Modeling*](#) [#2148]

The impact cratering two-dimensional numerical model is presented aimed to reproduce Rheasilvia crater formation on Vesta. The model is tuned to reproduce the prominent central mound in the crater.

Galiazzo M. A. Souami D. Egl S. Souchay J.

[*The Vesta Asteroid Family: Study of the Family and Close Encounters with Terrestrial Planes and Dynamical Influences by \(1\) Ceres and \(4\) Vesta*](#) [#1424]

The Vesta family is the largest asteroidal family known in the inner main belt, and it is believed to be a source of HED meteorites. We study its long-term evolution and investigate close encounters with Ceres, Vesta, and terrestrial planets.

Turrini D. Coradini A. Federico C. Formisano M. Magni G.

[*The Primordial History of Vesta and the Jovian Early Bombardment*](#) [#2047]

We report the first results of a joint study of the differentiation of Vesta and the bombardment triggered by the formation of Jupiter to assess the possible implications of the interpretation of the data supplied by the Dawn mission.

Marchi S. Bottke W. F. Cohen B. A. De Sanctis M. C. Wuennemann K. McSween H. Y.
 O'Brien D. P. Schenk P. Raymond C. A. Russell C. T.

[*A New Interpretation of \$^{40}\text{Ar}\$ - \$^{39}\text{Ar}\$ Ages of Eucrites and Implications for Vesta's Collisional History*](#) [#2167]

In this work we provide a new interpretation of Ar-Ar ages of HED meteorites that may significantly affect their implications for the collisional evolution of Vesta.

Starukhina L. V.

[*Global Distribution of Crater Ejecta on Asteroids*](#) [#1791]

Average thickness of crater ejecta is calculated for asteroids taking the surface curvature into account. Average thickness of ejecta from craters of diameters >5 km is shown to be >0.01 mm all over Vesta, which may explain its optical immaturity.

Denevi B. W. Coman E. I. Blewett D. T. Mittlefehldt D. W. Buczkowski D. L. Combe J.-Ph.
 De Sanctis M. C. Jaumann R. Li J. Y. Marchi S. Nathues A. Petro N. E. Pieters C. M. Schenk P.
 Schmedemann N. Schröder S. Sunshine J. M. Williams D. A. Raymond C. A. Russell C. T.

[*Regolith Depth, Mobility, and Variability on Vesta from Dawn's Low Altitude Mapping Orbit*](#) [#1943]

We use Framing Camera images acquired by the Dawn spacecraft from its low-altitude mapping orbit to characterize regolith depth, variability, and mobility on Vesta, and to locate areas of especially thin regolith and exposures of competent material.

Hiesinger H. Ruesch O. Jaumann R. Nathues A. Raymond C. A. Russell C. T.

[*Smooth Pond-Like Deposits on Asteroid 4 Vesta: Preliminary Results from the Dawn Mission*](#) [#2487]

We have identified smooth pond-like deposits on the surface of asteroid 4 Vesta, which might have several origins, including volcanism, impact sedimentation, impact melt deposition, dust levitation and transport, seismic shaking, or landslides.

Buratti B. J. Hicks M. D. Hillier J. K. Li J. Y. Reddy V.

[*The Roughness of Vestoids, Vesta, and other Small Bodies as a Clue to their Collisional History*](#) [#1527]

An analysis of the macroscopic roughness of Vesta and the V-type asteroids shows that their surfaces are rougher than C-type or S-type asteroids. These bodies may have had a violent collisional history or possess unique mechanical properties.

Ermakov A. I. Zuber M. T. Smith D. E.

[Forward Modeling of Vesta's Interior Structure Using Gravity and Shape Models from the Dawn Mission](#) [#2382]

We use gravity and shape models of Vesta along with geochemical evidence from HED meteorites in order to constrain Vesta's interior structure. Least-squares adjustment of gravity anomalies is performed to estimate the interior structure parameters.

Formisano M. Federico C. Coradini A. Turrini D. Capaccioni F.

[Time Scales of Accretion and Differentiation of Vesta](#) [#1984]

We constrain the timescales of accretion and differentiation of Vesta, by developing several thermal and structural scenarios based on radiogenic heating. The scenarios differ for the delay parameter in the injection of ^{26}Al by the solar nebula.

Keil K. Wilson L.

[Volcanic Eruption and Intrusion Processes on 4 Vesta: A Reappraisal](#) [#1127]

A new analysis supports our earlier predictions of sizes of lava flows and pyroclast deposits on Vesta, but argues against a magma ocean, instead suggesting eruptions were fed by magma from large sill-like intrusions at the base of the lithosphere.

Horváth A. Bérczi Sz. Illés-Almár E.

[Stratigraphy of the Rolling-Printed Groove-Fields on Dawn Images in Order to Reconstruct Paleoaes of Vesta](#) [#1402]

If we accept that the equatorial groove system is the result of surface prints of reimpacting ejecta boulders – thrown away by a huge impact – we can use it to identify the actual rotational axis of the asteroid.